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| 10/541,055 | 03/06/2006 | Tony Grabowski | 81120690 | 4072 |
| 28395 7590 02/09/2009 BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238 | | | | |
| EXAMINER | | | | |
| PANG, ROGER L | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/541,055

Applicant(s)

GRABOWSKI ET AL.

Examiner

Roger L. Pang

Art Unit

3655

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 14 and 32-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-7, 10, 14 and 36-46 is/are allowed.
- 6) ☒ Claim(s) 32-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

The following action is in response to the amendment filed for application 10/541,055 on December 15, 2008.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi '968 (from IDS) in view of Kanehara '425 (from IDS). With regard to claim 32, Shiraishi teaches a method for sensing and responding to a backfire arising in the intake system of a hydrogen fuelled reciprocating internal combustion engine, comprising the steps of: sensing a backfire (Col. 7, lines 49-50); and shutting off the hydrogen fuel to the engine when a backfire is sensed (Col. 4, lines 51-55). Shiraishi lacks the teaching of the fuel being automatically shut off to the engine when a backfire is sensed. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shiraishi to employ an automatic fuel shutoff to the engine in order to reduce a delay in action that may cause additional damage and since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192. Shiraishi lacks the teaching of sensing the backfire by sensing the temperature within the intake system. Kanehara teaches that a backfire can be detected when a temperature within the intake system is sensed to be high (Col. 2). It would have been obvious to one of

ordinary skill in the art at the time of the invention to modify Shiraishi to sense the temperature of the intake system to detect backfiring in view of Kanehara in order to provide a more accurate means to sense the backfiring of the system. With regard to claim 35, Shiraishi teaches the method, further comprising the step of resuming fuelling of the engine with hydrogen once a backfire event has ceased (start up).

Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi in view of Kanehara as applied to claim 32 above, and further in view of Urasawa '908. Shiraishi teaches the method, but lacks the teaching of a step of increasing the output torque of an electric drive system associated with the engine in the event the hydrogen fuel is shut off. Urasawa teaches a hybrid transmission wherein an electric drive system associated with an engine will increase output torque in the event that the engine is shut off (page 2). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Shiraishi to employ the step of increasing the output torque of an electric drive system associated with the engine in the event the hydrogen fuel is shut off in further view of Urasawa in order to maintain drive to eliminate the feeling of torque loss.

Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi in view of Kanehara as applied to claim 32 above, and further in view of Maack '924. Shiraishi teaches the method, but lacks the teaching of a step of sensing a backfire by sensing the pressure within the engines intake system. Maack teaches a vehicle, wherein an indication of backfiring can come from detected rapid positive fluctuations (Col. 1). It would have been obvious to one of ordinary skill at the time of the invention to modify Shiraishi to employ a pressure detection for backfiring in further view of Maack in order to provide an addition positive test for engine backfiring.

Allowable Subject Matter

Claims 1-7, 10, 14, 36-46 are allowed.

Response to Arguments

With regard to the Shiraishi reference, applicant argues that making a manual operation automatic would teach away from the manual operation teaching. However, if the same result is achieved manually and automatically, and the automatic means provides a benefit (in this case it would be time of response), then the modification would not teach away from the original controls. This modification would be a logical improvement.

Applicant's arguments have been considered, but are not persuasive.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fukumaru has been cited to show a similar powertrain and controls.

FACSIMILE TRANSMISSION

Submission of your response by facsimile transmission is encouraged. The central facsimile number is (571) 273-8300. Recognizing the fact that reducing cycle time in the processing and examination of patent applications will effectively increase a patent's term, it is to your benefit to submit responses by facsimile transmission whenever permissible. Such submission will place the response directly in our examining group's hands and will eliminate Post Office processing and delivery time as well as the PTO's mail room processing and delivery time. For a complete list of correspondence not permitted by facsimile transmission, see MPEP 502.01. In general, most responses and/or amendments not requiring a fee, as well as those requiring a fee but charging such fee to a deposit account, can be submitted by facsimile transmission. Responses requiring a fee which applicant is paying by check should not be submitting by facsimile transmission separately from the check.

Responses submitted by facsimile transmission should include a Certificate of Transmission (MPEP 512). The following is an example of the format the certification might take:

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office (Fax No. (571) 273-8300) on _____ (Date)

Typed or printed name of person signing this certificate:

(Signature)

If your response is submitted by facsimile transmission, you are hereby reminded that the original should be retained as evidence of authenticity (37 CFR 1.4 and MPEP 502.02). Please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile will only cause further unnecessary delays in the processing of your application; duplicate responses where fees are charged to a deposit account may result in those fees being charged twice.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roger L. Pang whose telephone number is 571-272-7096. The examiner can normally be reached on 5:30am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 571-272-7095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roger L Pang/
Primary Examiner, Art Unit 3655

Roger L Pang
Primary Examiner
Art Unit 3655

February 5, 2009